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10/519,025

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Marina B Jensen

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GIFFORD, KRASS, SPRINKLE, ANDERSON & CITKOWSKI, P.C

PO BOX 7021

TROY, MI 48007-7021

EXAMINER

DRODGE, JOSEPH W

ART UNIT

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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/519,025	Applicant(s) JENSEN, MARINA B	
	Examiner Joseph W. Drodge	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 52-76 is/are pending in the application.
- 4a) Of the above claim(s) 52-63,75 and 76 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 64-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 52-63,75 and 76 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims 52-63 REMAIN withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on February 1, 2008.

Applicant's election of Group II, claims 64-76 in the reply filed on February 1, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Newly submitted claims 75 AND 76 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The originally elected claims are apparatus claims; claims 75 and 76 pertaining to filtering of wastewater and gas, respectively, would require new and divergent fields of search and consideration of separate issues and grounds of rejection.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 75 and 76 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 64-69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over one of Gohrt et al PBPUBS Document US 2004/0238443 (effective filing date of October 11, 2001, filing date of parent application 09/974,060) OR Publication DE 19701045 (Gorak et al) in view of EPO Publication 466,954 (Smith).

Gohrt discloses a substance-transferring device comprising layers of material containing the same or different types of liquid and/or gas, comprising a plurality of convective and receiving layers ("material separation elements and second functionality elements), means for conducting liquid flow through the layers in various directions, at least in part in a direction parallel to layer surfaces (figures 1,4,6, paragraphs 9,17, etc.) , with substances transferred to/from layers by way of adsorption, absorption and extraction (paragraphs 19-21). The device may also effect chemical and biological reactions, catalyzed reactions and distillation. A possible wide range of tailored unit dimensions ranging from mm to cm units is suggested at (paragraph 39.

The liquids passing therethrough may have substances to be removed by separation components in the receiving layer utilizing distillation, rectification, adsorption, absorption,

extraction and/or material separation with simultaneous biological conversion (paragraphs 19-21). The layers are positioned horizontally with respect to each other, with components at tangent angles (figures 1a,1b,1c,4a and 4b and paragraphs 3 and 42).

Similarly Gorak et al disclose a very similar layered substance-transferring device or related device to that of Gohrt as shown in figures (), the description of Gorak et al in Gohrt serving as a rough translation of the Gorak et al document.

Gohrt discloses layers being used for combined reaction/separation such as reaction/distillation (paragraph 19). The claims differ in explicitly requiring layer thickness in the mm to cm range. However, ***Smith teaches a similar reaction and distillation separation layered, structure having layers of diverse material in the mm range of thickness (examples on pages 9 and 11), relative to liquid flow therethrough.*** It is a reasonable assumption that given such thickness of the separation/reactive layers, the intervening layers would have an approximately similar thickness. It would have been obvious to have designed the device of Gorak et al or Gohrt et al to have such thickness, in order to optimize flow rates, reaction rates and sorption or extraction capacities.

Gohrt or Gorak also disclose the following for the dependent claims (paragraphs of Gohrt): layers being in a sandwich or stacked arrangement for claims 65-67 (paragraph 1); impermeable/sealing material for claim 68 (paragraph 40), strips of metal skirt 8 can also be considered a broken, impermeable surrounding layer (paragraphs 41-42); ***the layers comprising the specific materials of claims 69 and 71 such as fibrous mesh material and charcoal (paragraphs 12,14,15 etc.);*** figure 6 and paragraph 44 suggesting means for forcing flow ,

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inherently requiring pumping for claim 73; paragraph 44 also suggesting a series arrangements of chambers, hence sorption/filtration elements or layers.

Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gohrt et al PBPUBS Document US 2004/0238443 (effective filing date of October 11, 2001, filing date of parent application 09/974,060) OR Publication DE 19701045 (Gorak et al) in view of EPO Publication 466,954 (Smith) as applied to claims 64-69 and 71 above, and further in view of Shelden et al patent 5,417,938. Claim 70 requires one or more convective layers comprising filament-type plastic fibers. Shelden suggest such use of plastic materials in a layered reactive and separative device (column 4, lines 34-39) in order to generate increased device strength and rigidity while retaining permeability.

Claim 72 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gohrt et al PBPUBS Document US 2004/0238443 (effective filing date of October 11, 2001, filing date of parent application 09/974,060) OR Publication DE 19701045 (Gorak et al) in view of EPO Publication 466,954 (Smith) as applied to claims 64-69 and 71 above, and further in view of Philips PGPUBS document US 2006/0273008. Claim 72 requires a layer to comprise open-structured plant fibers, that are permeable. Philips teaches to include such plant fibers (cellulose) in layers of a stacked, Layered membrane adsorber device to provide desired filtering and flow characteristics, and also to allow imparting of desired functionality such as hydrophilicity, hydrophilicity or surface charge or incorporation of sorbing ligands (paragraphs 47-49)

Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gohrt et al PBPUBS Document US 2004/0238443 (effective filing date of October 11, 2001, filing date of parent application 09/974,060) OR Publication DE 19701045 (Gorak et al) in view of EPO

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Publication 466,954 (Smith) as applied to claims 64-69 and 71 above, and further in view of Block et al patent 6,905,576. Claim 73 requires a pump. An exemplary use of Gohrt is with reactive distillation (Examples). Block et al teach to use a pump with reactive distillation (column 5, lines 46-64) in order to facilitate mass-volume flow of fluid mixtures between vertically oriented reactive and separation structures at differing heights.

Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gohrt et al PB PUBS Document US 2004/0238443 (effective filing date of October 11, 2001, filing date of parent application 09/974,060) OR Publication DE 19701045 (Gorak et al) in view of EPO Publication 466,954 (Smith) as applied to claims 64-69 and 71 above, and further in view of Fennhoff et al patent 6,307,111. Fennhoff teaches to employ prefilters in reactive distillation processes, as in Gohrt (examples), see the paragraph bridging columns 4-5 in order to remove substances that would otherwise interfere with the reactive distillation.

Applicant's arguments filed on 7/28/2008 have been fully considered but they are not persuasive. It is argued that Gohrt describes a simultaneous flow of liquid and gas through the layered column, while amended claim 64 describes treatment of liquid or gas, but not liquid and gas at the same time. To the contrary, claim 64 merely requires that individual layers of the device conduct either a fluid/liquid or gas, respectively. Gohrt primarily discloses liquid fluids being treated and flow of such liquids through the device layers (paragraphs 12-14 for example).

It is argued that Smith describes material for a reaction-distillation column, (suggesting non-pertinence?), does not describe only liquid or gas being treated in the column, and does not describe thickness of the layers with respect to liquid or gas. Gohrt also discloses layers adapted for combined distillation separation and chemical reaction (paragraph 19), hence Smith is

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germane. Smith is similarly directed to treatment of various liquids, the layer thickness in mm to cm range is with respect to liquid conducted therethrough. It is a reasonable assumption that given such thickness of the separation/reactive layers, the intervening layers would have an approximately similar thickness.

The rejection is not made final considering the introduction of tertiary references applied against dependent claims 70 and 72-74.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Roy Sample, can be reached at 571-272-1376. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free).

JWD

10/30/2008

/Joseph W. Drodge/

Primary Examiner, Art Unit 1797